

Serial No.: 09/483,337

Confirmation No.: 8254

Filed: January 14, 2000

For: COMPOSITIONS AND METHODS FOR NONENZYMATIC LIGATION OF OLIGONUCLEOTIDES AND  
DETECTION OF GENETIC POLYMORPHISMS

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**Remarks**

The Office Action mailed June 16, 2003 has been received and reviewed. Claims 64-72 having been added, the pending claims are claims 44-48, 50-54, 56-60, and 64-72.

Reconsideration and withdrawal of the rejections are respectfully requested.

New claims 64-66 are generally supported by claim 44. New claims 67-69 are generally supported by claim 50. New claims 70-72 are generally supported by claim 56. New claims 64, 66, 67, 69, 70, and 72 have incorporated additional description for adjacent oligonucleotides, which is supported by the specification at, for example, page 16, lines 2-17. New claims 65-66, 68-69, and 71-72 have incorporated additional description for oligonucleotides as "comprising a sequence of nucleotides," as is obvious to one of skill in the art.

**Interview Summary**

Applicant thanks Examiner Lawrence E. Crane and Supervisory Patent Examiner James O. Wilson for granting Applicant, Eric T Kool, and Applicant's Representative, Loren D. Albin, a telephonic interview on October 10, 2003.

The rejection of claims 44, 50, and 56 under 35 U.S.C. §112, second paragraph, as allegedly being rendered indefinite by the term "comprising" was discussed. Examiner Crane clarified that the rejection is based on the assumption that the phrase "oligonucleotide comprising" implies the absence of a complete description of structural features of the oligonucleotide. Applicant's Representative disagreed, and asserted that the case law cited in the Office Action mailed June 16, 2003 does not support the Examiner's assumption. Applicant's Representative solicited alternative claim language that might obviate the rejection, but none was suggested.

The rejections of claims 44-48, 50-54, and 56-60 under 35 U.S.C. §102 and §103 were discussed. Applicant's Representative reiterated that not all of the claim language has been considered by the Examiner, including for example, "not directly adjacent" (e.g., claim 44), "less

than 7 nucleotides in length" (e.g., claim 50), and "target RNA" (e.g., claim 56). Applicant's Representative further submitted that the above-recited claim language is neither disclosed nor suggested by the cited art. The Examiners agreed to consider and address the claim language in the next Official Communication.

The Examiners also raised a new issue, indicating that the language "not directly adjacent" (e.g., claim 44) may lack clarity. In the event that the next Official Communication includes a rejection based on lack of clarity of this claim language, Applicant respectfully requests that the rejection be made non-final.

#### **Rejection under 35 U.S.C. §112, Second Paragraph**

The Examiner rejected claims 44-48, 50-54, and 56-60 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Specifically, the Examiner alleged that the phrase "oligonucleotide comprising" implies the absence of a complete description of structural features of the oligonucleotide. Applicant respectfully traverses the rejection.

Regarding the requirement under 35 U.S.C. §112, second paragraph, for particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention, the M.P.E.P. states that "[t]he primary purpose of this requirement of definiteness of claim language is to ensure that the scope of the claims is clear so the public is informed of the boundaries of what constitutes infringement of the patent." M.P.E.P. §2173.

*First*, Applicant respectfully submits that the use of "comprising" or "having" as a transitional phrase is proper as acknowledged by the M.P.E.P. (*see, for example*, M.P.E.P. §2111.03), which states that the term "comprising" is synonymous with "including," "containing," or "characterized by." Further, Applicant respectfully notes that the United States Patent and Trademark Office has issued numerous patents with claims reciting an "oligonucleotide comprising" a specific element. *See, for example*, U.S. Pat. Nos. 6,020,483, claim 16 (L. Eric Crane, Primary Examiner); 6,111,086, claim 1 (James O. Wilson, Primary

Examiner); and 6,090,932, claim 16 (James O. Wilson, Primary Examiner). Thus, Applicant respectfully submits that the term "comprising" is clear, and that the present claims distinctly define Applicant's invention using inclusive or open-ended language.

*Second*, Applicant respectfully submits that the scope of claims 44-48, 50-54, and 56-60, which recite the term "comprising," is clear and informs the public of the boundaries of what constitutes infringement of the patent. Clearly, the method recited in the claims including oligonucleotides comprising the 3' and/or 5' ends recited in the present claims is within the boundaries of the present claims.

*Finally*, none of the cases cited by the Examiner have any bearing on the issue of whether the term "comprising" is definite. Specifically, *Ex parte Wu*, 10 USPQ2d 2031, 2032 (Bd. Pat. App. & Inter. 1989) (EXHIBIT A) dealt with a claim including the term "optionally," and the Board did "not consider the claims to be indefinite as a result of the claimed optional component." *See*, M.P.E.P. §2173.05(h). Further, *Ex parte Steigerwald*, 131 USPQ 74 (Bd. App. 1961) (EXHIBIT B); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1949) (EXHIBIT C); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949) (EXHIBIT D) are fact specific cases in which claim language including "such as," or "such, for example, as," was held to be indefinite. *See*, M.P.E.P. §2173.05(d).

Moreover, the M.P.E.P. states that

[t]he examiner's focus during examination of claims for compliance with the requirement for definiteness of 35 U.S.C. 112, second paragraph is whether the claim meets the threshold requirements of clarity and precision, not whether more suitable language or modes of expression are available. When the examiner is satisfied that patentable subject matter is disclosed, and it is apparent to the examiner that the claims are directed to such patentable subject matter, he or she should allow claims which define the patentable subject matter with a reasonable degree of particularity and distinctness. Some latitude in the manner of expression and the aptness of terms should be permitted even though the claim language is not as precise as the examiner might desire. Examiners are encouraged to suggest claim language to applicants to improve the clarity or precision of the language used, but should not reject claims or insist on their own preferences if other

modes of expression selected by applicants satisfy the statutory requirement.  
(M.P.E.P. §2173.02; emphasis in original).

Thus, based on the remarks presented herein above, Applicant respectfully submits that claims 44-48, 50-54, and 56-60 particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicant respectfully requests that the Examiner reconsider and withdraw the rejection under 35 U.S.C. §112, second paragraph.

Applicant respectfully requests that the rejection under 35 U.S.C. §112, second paragraph, be reconsidered and withdrawn.

#### **Rejection under 35 U.S.C. §102**

The Examiner rejected claims 44-48, 50-54, and 56-60 under 35 U.S.C. §102 as being anticipated by Northwestern University (WO 96/35699); by Letsinger et al. (U.S. Patent No. 5,681,943); and by Gryaznov et al. (U.S. Patent No. 5,571,903). Applicant respectfully traverses the rejection.

"[F]or anticipation under 35 U.S.C. 102, the reference must teach *every aspect* of the claimed invention either explicitly or impliedly." M.P.E.P. §706.02 (emphasis added). Applicant respectfully submits that none of the cited art teaches every aspect of the claimed invention.

A description of aspects of the present claims that are *not taught* by the above-cited documents are clearly on the record. *See, for example*, the Amendment and Response mailed by Applicant on June 2, 2003; the Amendment and Response mailed by Applicant on October 23, 2002, and the remarks in the Interview Summary offered herein above, all of which are hereby incorporated by reference. Applicant respectfully reiterates the following examples of *aspects* of claims 44, 50, and 56, which are *not taught* by any of the cited documents.

For example, claim 44 recites that "when both probes are bound to the target polynucleotide, an end of the universal oligonucleotide probe *is not directly adjacent* to an end of the mutant polymorphism oligonucleotide probe" (emphasis added). Further, claim 50 recites "a mutant polymorphism oligonucleotide probe *of less than 7 nucleotides in length*, a wild-type

polymorphism oligonucleotide probe and a universal oligonucleotide probe" (emphasis added). Finally, claim 56 recites "a method for detecting a genetic polymorphism in a *target RNA*" (emphasis added). Applicant respectfully submits that the Examiner lacks the discretion to ignore the above-recited claim language.

Applicant respectfully requests that the rejection under 35 U.S.C. §102(b) be reconsidered and withdrawn.

### **Rejection under 35 U.S.C. §103**

The Examiner rejected claims 44-48, 50-54, and 56-60 under 35 U.S.C. §103 as being unpatentable over Northwestern University (U.S. Patent No. WO 96/35699). Applicant respectfully traverses the rejection.

"To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations." M.P.E.P. §706.02(j).

As described herein above in Applicant's remarks to the rejections under 35 U.S.C. §102, Northwestern University (U.S. Patent No. WO 96/35699) fails to teach or suggest all the present claim language. Further, Applicant respectfully submits that the Examiner has failed to present a convincing line of reasoning as to why one of skill in the art would have found the claimed invention to have been obvious in light of Northwestern University (U.S. Patent No. WO 96/35699). *See, for example*, M.P.E.P. §706.02(j). Thus, Applicant respectfully submits that the Examiner has failed to present a *prima facie* case of obviousness of claims 44-48, 50-54, and 56-60 over Northwestern University (U.S. Patent No. WO 96/35699).

Applicant respectfully requests that the Examiner reconsider and withdraw the rejection under 35 U.S.C. §103.

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**New Claims**

Applicant respectfully submits that new claims 64-66, 67-69, and 70-72 are patentable for at least the reasons recited above for the patentability of claims 44, 50, and 56, respectively. Applicant respectfully requests that the Examiner enter, consider, and pass the new claims on to allowance.

**Amendment and Response**

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**Summary**

It is respectfully submitted that all the pending claims are in condition for allowance and notification to that effect is respectfully requested. The Examiner is invited to contact Applicant's Representatives, at the below-listed telephone number, if it is believed that prosecution of this application may be assisted thereby.

Respectfully submitted for  
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PATENT TRADEMARK OFFICE

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By: 

Name: Sam Hee

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**FULL TEXT OF CASES (USPQ2D)**

All Other Cases

**Ex Parte Wu (BdPatApp&Int) 10 USPQ2d 2031 Ex Parte Wu****U.S. Patent and Trademark Office, Board of Patent Appeals and  
Interferences  
10 USPQ2d 2031****Released March 17, 1989****No. 87-0509****Headnotes****PATENTS****1. Patent construction -- Claims -- Indefinite and incomplete (§ 125.1313)**

Phrase "optionally containing a polyamine," in application claim for method for using particular composition to inhibit corrosion on metal surfaces, does not warrant rejection under 35 USC 112, since composition set forth in claims can consist of first three components recited or can include polyamine as fourth component, and therefore claims are not indefinite due to inclusion of optionally claimed component.

**2. Patentability/Validity -- Obviousness -- Combining references (§ 115.0905)**

Claimed method for inhibiting corrosion on metal surfaces using composition consisting of epoxy resin, petroleum sulfonate, and hydrocarbon diluent are obvious in view of four prior patents, since incorporation of petroleum sulfonate, desirable qualities of which were established in secondary references, in composition of primary reference would have been prima facie obvious, since primary reference clearly suggests presence of hydrocarbon extenders or diluents, since it would have been obvious to omit polybasic acid salts of primary reference where, as in claims at issue, function attributed to such salts is neither desired nor required, since, although composition and process of primary reference are disclosed to be particularly suitable for treating surfaces in contact with fresh water, it would have been obvious to one of ordinary skill to adapt such coatings to other environments requiring

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corrosion protection, and since no evidence exists that other prima facie obvious processes suggested in references are less effective than claimed method.

### **3. Patent construction -- Claims -- Indefinite and incomplete (§ 125.1313)**

Phrase "optionally containing a polyamine," in application claims describing method for using particular composition to inhibit corrosion on metal surfaces, does not warrant rejection under 35 USC 112 despite prior Board of Patent Appeals and Interferences decisions finding that phrase "such as" renders claims indefinite, since term "optionally" is more analogous to accepted expressions "not more than" and "up to," and does not create doubt arising from use of "such as," which raises question as to whether feature introduced by language is either merely exemplary of claim or required feature of claim.

### **Case History and Disposition:**

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**Appeal from final rejection of claims (John C. Bleutge, primary examiner; R. Sellers, examiner).**

**Patent application of Yulin Wu, serial no. 749,366, filed June 27, 1985, which is division of serial no. 298,444, filed Sept. 1, 1981. From final rejection of claims 1-4, 6, 7, and 14-19, applicant appeals. Rejection on ground of obviousness affirmed; examiner's request for reconsideration of that portion of decision reversing examiner's rejection for indefiniteness under 35 USC 112 denied.**

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### **Attorneys:**

**E. T. Kittleman, Jack E. Phillips, and Williams, Phillips & Umphlett, Bartlesville, Okla., for appellant.**

### **Judge:**

**Before Seidleck, Tarring, and W. Smith, examiners.**

### **Opinion Text**

### **Opinion By:**

**Tarring, examiner-in-chief.**

This is an appeal from the examiner's final rejection of claims 1 through 4, 6, 7 and 14 through 19. The only remaining claims, claims 8 through 13, have been withdrawn as being directed to the nonelected invention under 37 CFR 1.142.

The application is directed to a process for using a particular composition to inhibit corrosion on a metal surface. Claim 1 is illustrative:

1. A method for decreasing corrosion rate on a metal surface by contacting the metal surface with a composition consisting of an epoxy resin, a petroleum sulfonate and a hydrocarbon diluent optionally containing a polyamine. This application is a division of Serial No. 298,444, wherein the examiner's rejection of composition claims was affirmed by the Board in Appeal No. 674-24.

The examiner has cited the following patents as evidence of obviousness under 35 USC 103:

Westlund, Jr. et al.		
(Westlund)	2,843,548	Jul. 15, 1958
Murdock	3,427,190	Feb. 11, 1969
Pilla	4,157,991	Jun. 12, 1979
Green	611,572	Dec. 27, 1960
(Canadian Patent)		

Two rejections are before us:

(a) Claims 1 through 4, 6, 7 and 14 through 19 stand rejected under 35 USC 112, second paragraph, as being indefinite; and

(b) Claims 1 through 4, 6, 7 and 14 through 19 stand rejected under 35 USC 103 as being unpatentable over Murdock in view of Pilla, Westlund and the Canadian Patent.

We have carefully considered the respective positions of the examiner and the appellant, as well as the evidence of record, in reaching our decision that the rejection under 35 USC 112 shall be reversed while the rejection under 35 USC 103 shall be sustained.

[1] The rejection under 35 USC 112 is based on the examiner's contention that the term "optionally" in claim 1 does not clearly indicate whether the polyamine is intended to be a part of the composition. We have no difficulty determining the scope of claim 1 as drafted. The composition set forth in the claim can consist of the first three components recited or it can include a polyamine as a fourth component. We therefore do not consider the claims to be indefinite as a result of the claimed optional component.

[2] We are convinced that it would have been obvious, in view of the various teachings of the secondary references, to include petroleum sulfonate in the anti-corrosion compositions taught by Murdock. The secondary references establish that petroleum sulfonates are recognized in the art as corrosion inhibitors (Pilla), rust inhibiting materials (Westlund) and surface active agents which promote the solubility of corrosion inhibiting additives in petroleum hydrocarbons (Canadian Patent). Inasmuch as these recognized properties are clearly complimentary to the anti-corrosion purposes of Murdock's composition and method, the incorporation of petroleum sulfonates in Murdock's composition with the expectation of thereby achieving improvement in the properties recognized to be attributable to the additive would have been *prima facie* obvious.

We note appellant's argument that the Murdock composition does not contain a hydrocarbon diluent. Murdock clearly suggests the presence of hydrocarbon extenders (or diluents) at column 10, lines 68 through 73.

Appellant's claims exclude the presence of Murdock's salts of polybasic acids in the composition defined as "consisting of" the listed components. We agree with the examiner that it would have been obvious to omit Murdock's polybasic acid salts when the function attributed to these salts is not desired or required. Murdock teaches that these salts are beneficial when the composition is employed in contact with fresh water (column 3, lines 4 through 7). Omission of the salt component in preparing compositions to be used to provide corrosion resistance to metals in environments which do not encounter fresh water would have been obvious.

We also note appellant's argument that Murdock does not teach reducing corrosion in environments containing high temperatures and/or high pressures. While Murdock's composition and process are disclosed to be

particularly suitable for treating surfaces in contact with fresh water, we are convinced that one of ordinary skill would recognize the general applicability of the anti-corrosion coatings taught therein. It would have been obvious to adopt these coatings to whatever environments exist at the sites where corrosion protection is required. Accordingly, it would have been obvious to adopt and apply Murdock's anti-corrosion compositions in the temperature and pres

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sure environments set forth in claims 6 and 7. We note Murdock teaches that his process can be used in any type of structure including reaction vessels and well jackets (column 12, lines 72-75).

The fact that all of the references are directed to treating metals with compositions to impart corrosion resistance provides an adequate commonality of interest between the four references, as well as appellant's field of endeavor, to suggest the pertinence of the teachings of each of the references to appellant's problem. We do not agree with appellant that the rejection is based on impermissible hindsight. While, as appellant suggests, the references might suggest that other compositions might also serve to solve appellant's problem, we note that the present specification teaches numerous modifications of the composition which are outside of the scope of the present claims and apparently provide at least equivalent results to the process claimed (page 7, lines 4 through 9; page 8, lines 16 through 33). Accordingly, we see no reason, based on this record, to conclude that appellant's process works where other *prima facie* obvious processes fail.

For the reasons given above as well as those expressed by the examiner in his Answer, the examiner's decision is affirmed.

**AFFIRMED .**

37 CFR 1.136(a) does not apply to the times for taking any subsequent action in connection with this appeal.

### **UPON REQUEST FOR RECONSIDERATION**

**December 22, 1988**

The examiner has requested reconsideration of that part of our decision, mailed February 29, 1988, wherein we reversed the rejection of claims 1 through 4, 6, 7 and 14 through 19 under the second paragraph of 35 USC 112. Neither the examiner nor the appellant have requested reconsideration of that portion of our decision wherein we affirmed a rejection under 35 USC 103 over stated prior art. We have reconsidered our reversal of the rejection under 35 USC 112 in view the examiner's request, however, we decline to modify our position in any respect. In rejecting a claim under the second paragraph of 35 USC 112, it is incumbent on the examiner to establish that one of ordinary skill in the pertinent art, when reading the claims in light of the supporting specification, would not have been able to ascertain with a reasonable degree of precision and particularity the particular area set out and circumscribed by the claims. *In re Moore* , 439 F.2d 1232, 169 USPQ 236 (CCPA 1971); *In re Hammack* , 427 F.2d 1378, 166 USPQ 204 (CCPA 1970). The determination of such issues necessarily depends on the facts of each particular case or application *Chicago Pneumatic Tool Co. v. Hughes Tool Co.* , 97 F.2d 945, 38 USPQ 258 (10th Cir. 1938).

In our original decision we found

We have no difficulty determining the scope of claim 1 as drafted. The compositions set forth in the claim can consist of the first three components recited or it can include a polyamine as a fourth component.

This determination followed from the rationale of *In re Moore* , *supra* and *In re Hammack* , *supra* .

[3] The examiner bases his request on the prior decisions *Ex parte Steigerwald* , 131 USPQ 74 (BdApls 1961) and *Ex parte Grundy* 63 Ms.D. 219 (BdApls), wherein the term "such as" was found to render the claims indefinite. We do not consider the term "optionally" to always result in the same degree of variability or indefiniteness as might result from the use of the phrase "such as". As indicated previously, each case must be

decided on its own facts. In this case, the term "optionally" clearly indicates that the polyamine may, or may not, be present as a fourth component in the, otherwise, three component composition. Claims often include the accepted expressions "up to", "O to . . . %", "not more than", which are recognized to indicate the possible, but not required, presence of a component. See *Ex parte Head*, 214 USPQ 551 (Bd.App.1981). The use of the term "optional" in the present circumstances is more analogous to the noted accepted expressions than it is to the use of the phrase "such as" in the cases relied on by the examiner. The use of the term "such as" can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claim. We see no similar question or doubt arising from the present use of the term "optionally."

We note the examiner's argument that

Since the term "consisting of" closes the claim to all other ingredients *not specifically recited*, the polyamine would be ex

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cluded by the claim using the language "consisting of an epoxy resin, a petroleum sulfonate and a hydrocarbon diluent. . ." (emphasis added)

This argument apparently relies on ignoring the fact that the polyamine *is specifically recited* as being an optional component.

The examiner's argument continues

Therefore the additional language "optionally containing a polyamine" renders the claim indefinite since it is not known what further limitations, if any, would be imposed on the claim by the use of said language. If no further limitations are imposed the language is superfluous and confusing.

Whatever confusion exists in this matter is not attributable to the words of the claim. It seems that the argument is premised on the fact that the claim means one thing if the "optionally. . ." phrase is ignored, and might mean something else if the phrase is considered. We know of no basis for interpreting the claim by ignoring the specific words used in the claim. We therefore see no rational basis for the examiner's finding that confusion would result should such an unwarranted method of claim interpretation be followed.

We note that the request for reconsideration does not provide any basis for modifying our stated understanding of the meaning of the criticized claim language. We, therefore, see no reason to modify our position as expressed in our original decision and as quoted, *supra*.

The request is granted to the extent that we have reviewed our original decision, however, it is denied to the extent that it seeks modification thereof.

**DENIED**

- End of Case -



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## Ex parte STEIGERWALD

(BdPatApp&Int)

131 USPQ 74

Opinion dated Sept. 14, 1961

U.S. Patent and Trademark Office, Board of Patent Appeals and Interferences

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### Headnotes

#### PATENTS

**1. Specification -- Sufficiency of disclosure (§ 62.7)**

Use of trade names throughout description and claims without precise identification of composition thereof at time of filing application renders disclosure and claims vague and indefinite; such terms must be identified since composition sold under such labeling may be changed at whim of manufacturer.

**2. Claims--Miscellaneous objections (§ 20.70)**

"Such as" clause in claims is improper.

**Particular patents--Pest Control**

Steigerwald, Formulations for Pest Control and Other Purposes, claims 1 to 17 of application refused.

#### Case History and Disposition:

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**Appeal from Division 43.**

Application for patent of Oscar F. Steigerwald, Serial No. 538,681, filed Oct. 5, 1955.  
From decision rejecting claims 1 to 17, applicant appeals. Affirmed.

**Attorneys:**

**JAMES M. HEILMAN and HEILMAN & HEILMAN, both of New York, N.Y., for applicant.**

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**Judge:**

Before FEDERICO and ASP, Examiners in Chief, and LIDOFF, Acting Examiner in Chief.

**Opinion Text****Opinion By:**

LIDOFF, Acting Examiner in Chief.

This is an appeal from the final rejection of claims 1 to 17, which are all the claims in the application. Claims 1 and 5 are particularly illustrative and read as follows:

1. Improved process for the distribution of a fluid concentrate which comprises displacing said fluid concentrate from a container by means of a liquid, wherein said fluid concentrate mixes with additional quantities of said liquid, said fluid concentrate being characterized by having a specific gravity different than said liquid and being further characterized by being emulsifiable with said liquid only at shock conditions exerted outside of said container.

5. Improved composition adapted to be dispensed from a proportioner, said composition being characterized by having a specific gravity other than one and being further characterized by being non-emulsifiable with water under normal operating conditions such as while in the container of a proportioner, but being emulsifiable with water at shock conditions.

References relied on are:

Hyde 1,882,618, Oct. 11, 1932

Steindorff et al. 2,213,477, Sept. 3, 1940

Schuler et al. 2,228,407, Jan. 14, 1941

Chisholm -- "Insecticide Formulation" -- Agriculture Chemicals -- November 1951--pages 36, 37, 109 and 111.

Frear--"Pesticide Handbook" -- 6th Edition, College Science publication, State College, Pa.--1954-- pages 12, 32, 84, 104, 164 and 180 to 182.

The contended subject matter is described in page 2 of the examiner's answer and relates in general to a difficulty emulsifiable composition, preferably containing a pesticide, for use in forming a dispersion in a water pistontype proportioner.

The references are described in pages 2 and 3 of the examiner's answer and we shall in our decision below refer to further portions of said references.

The examiner has rejected claims 1 to 17 as failing to properly define the alleged invention and claims 12 to 17 as vague and indefinite and based upon an insufficient disclosure. As to the first rejection, appellant has responded by little more than a general traverse and as to the second rejection appellant contends one skilled in the art would know what is intended by the trade names employed and what is required to "set free" the emulsifier to produce oil and water emulsion under turbulent or shock conditions.

We shall consider the above rejections together since they are interrelated and both depend upon the requirements of 35 U.S.C. 112 to distinctly claim the subject matter regarded by appellant to be his invention and to describe said invention in the specification in such manner that one skilled in the art could make and use the same.

Appellant has failed to understand the examiner's objection to the language bridging pages 10 and 11 of the specification which does not form a complete sentence. Noting the criticized language to be a clause following the colon after "-might be" we do not consider the objection as lacking syntax to be sound.

We do not believe, however, that one skilled in the art would know what is intended by the explanation inserted in page 11 that the emulsifier would be "set free" under agitation. This has not been demonstrated to be a

known phenomenon. Claims dependent upon this disclosure are therefore indefinite and vague as pointed out by the examiner.

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[1] The use of various trade names throughout the description and in the claims without precise identification of the composition thereof at the time of filing this application renders the disclosure and claims vague and indefinite. As pointed out in the Manual of Patent Examining Procedure, Section 608.01 (v), cited by the examiner without response by appellant, such terms must be identified since the composition sold under such labeling may be changed at the whim of the manufacturer. Note Ex parte Bickell et al., 1959 C.D. 21, 743 O.G. 737, 122 USPQ 27.

Appellant has not responded to the objections to the claims pointed out specifically in pages 6 and 7 of the examiner's answer and we agree that the therein criticized terms are so broad, vague, indefinite and functional as to render impossible a clear determination of what is intended to be covered by the claims. We accept the examiner's position as set forth in his answer in holding the claims to fail to conform with the requirements of 35 U.S.C. 112.

While the appellant argues his alleged invention to be based upon a particular type of emulsifier, which will only emulsify under turbulent or shock conditions, the claims are not all so limited. The functional statements of desired characteristics do not adequately describe this type of emulsifier. In our opinion, the art does not recognize a class of emulsifiers which are chemical combinations so stabilized as to be broken down only under conditions of agitation thereafter to produce emulsions by mere dilution, which appears to be indicated in the terms employed in claims such as 1, 2, 3, 5, 10, 11, 14 and 17. Appellant has cited no authority to demonstrate knowledge of this class of emulsifier.

We also note claims 12, 13, 15 and 16 to recite "Emulsifier" broadly and therefore to read upon any and all emulsifiers and not to be limited to the argued inventive concept.

Claim 5, as pointed out by the examiner, reads upon any difficulty emulsifiable composition since it is in terms no more than a statement of desired results without positive identification of the materials to be included.

The inclusion of apparatus limitations in the process claims and apparatus or process limitations in the composition claims, particularly in the "adapted to" clauses adds nothing to the claims. We agree with the examiner's criticism of such terms as "shock conditions exerted outside of said container" and "pressure and turbulence conditions exerted outside said container". We further do not find proper the terms including "a proportioner".

[2] The "such as" clause is improper in claims 5 to 11.

We wish also to point out the term "polyoxyethylated nonylphenols" (claims 4, 6 and 9) is also vague and indefinite to the point of including inoperative compounds since, as is clear from Steindorff et al., either water-solubility or water-insolubility may be exhibited by such phenols depending upon the length of the oxyethylene chain. The term is, in effect, a product-by-process term and since it does not set forth the conditions of the reaction nor the number of oxyethylene units in the molecule, it includes water-soluble polyoxyethylated nonylphenols which would not be operative in the claimed composition.

The examiner has rejected the appealed claims as being unpatentable over the cited art in many different and overlapping rejections, including apparently a rejection of claims 1 to 11 as unpatentable over Schuler et al., Hyde or Chisholm in view of Steindorff et al.; of claims 1 to 11 as unpatentable over Frear in view of Hyde and Schuler et al.; of claims 1 to 4 as unpatentable over the operation of the admittedly old "Hydromix" apparatus (this rejection is apparently also included in the first two rejections noted above); of claim 5 as unpatentable over any difficulty emulsifiable composition such as those of the cited art; and of claims 6 to 17 as unpatentable over Frear alone. We shall, however, as has appellant, consider as a whole all these rejections based upon prior art.



Claims 1 to 4 are directed to the method of operating the admittedly old "Hydromix" apparatus employing a fluid concentrate of certain stated characteristics. These claims do not differentiate over the known process of operating said apparatus merely by selecting a concentrate described only in terms of desired properties. This is particularly so since there is no known class having these desired properties but being differentiated over the compositions of the prior art hereinafter described. A particular emulsifying agent is included in claim 4, however, as we have pointed out above, the terminology "polyoxyethylated nonylphenols" is not limited to emulsifiers insoluble in water.

Claim 5, describing only desired properties in functional language and not limited to any particular composition, is, as stated by the examiner, met in terms by any difficulty emulsifiable composition including those described in the references.

As to the remaining claims there is no demonstrated coaction between the

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broadly described, or specifically defined pesticidal ingredient, and the emulsifying agent described in indefinite terminology or in terms of functional limitations, or (claims 12, 13, 15 and 16) merely as "Emulsifier" without any limitation. The compositions of the references represents the knowledge of the art of pesticidal compositions of the type claimed wherein solvents for the pesticide and emulsifiers are normally employed. The broad, loose, and indefinite terms of appellant's claims do not differentiate thereover. Appellant's arguments relating to the desired properties of the composition are not persuasive as to claims not limited to components which will necessarily produce these desired characteristics.

Hyde and Schuler et al. each disclose pesticidal compositions containing tar acid oils, which are phenols, and emulsifiers which produce emulsions with water only upon agitation. To replace the emulsifier with a different known emulsifier such as the polyoxyethylated nonylphenols of Steindorff et al. (note Example 8), Chisholm, or Frear (pages 84 and 164) would be quite obvious to one of average skill in this art.

Contrary to appellant's arguments the art does recognize the ability to control specific gravity; Hyde in column 2, lines 9 to 15, clearly teaches control of specific gravity of the composition as desired.

Chisholm discloses it to be conventional to produce emulsions of insecticides with various surface active agents and mutual solvents, controlling water miscibility as desired. Thus to produce a water immiscible formulation in accordance with the teachings of Chisholm would be obvious. The inclusion of a coloring agent where desired (claims 12, 13, 15 and 16) is a well known expedient.

Frear, as pointed out by the examiner, discloses the art knowledge of the specific pesticides and the specific emulsifying agents claimed by appellant. To employ the specific emulsifying agent with the specific pesticide in pesticidal formulations in the manner known to the art would be a mere matter of routine.

Steindorff et al. teach the formation as desired of water-soluble or water-insoluble emulsifying agents by the reaction of alkylene oxides with phenols (page 2, column 1, lines 30 to 40). Alkylated phenol starting materials such as isononylresorcinol (page 1, column 2, line 23) and isononylphenol (Example 8) are disclosed. Control of reaction to produce either water-soluble or water-insoluble emulsifying agents is clearly taught and is exemplified in Examples 8, 9, 10, 12 and 16. These disclosures include emulsifying agents which are not soluble in water but which may be emulsified by being worked up in water, presumably by agitation. To employ such known emulsifiers for their intended purpose in pesticidal compositions such as those of Schuler et al., Hyde or Chisholm or in those suggested in Frear would in our opinion be entirely obvious to the pesticidal chemist. The examiner's rejections therefore will be sustained.

The decision of the examiner is affirmed.

**- End of Case -**



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## Ex parte HALL

(BdPatApp&Int)

83 USPQ 38

Patent issued Sept. 27, 1949

Opinions dated Aug. 11 and Sept. 23, 1948

U.S. Patent and Trademark Office, Board of Patent Appeals and Interferences

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### Headnotes

#### PATENTS

##### 1. Claims--Alternative

##### Claims--Indefinite

##### Words and phrases

Method claim reciting chemical reaction between materials is indefinite where it recites "material such as rock wool or asbestos"; also, phrase is alternative, since, if rock wool is equivalent of asbestos, phrase amounts to no more than improper statement of asbestos or its equivalent.

##### 2. Claims--Indefinite

##### Words and phrases

Claims reciting "formaldehyde glue" are rejected as unduly broad and indefi

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nite since formaldehyde is not itself a glue and Board is aware of no standardized product known by this name.

##### 3. Double patenting--Coping applications

Ex parte Cohen, 52 USPQ 189, held that, where patent has been granted on one specific form of invention and no generic claim can be drawn, there is no objection to allowance of claims to another species in patentee's coping application to second species provided claims are not for same invention.

##### Particular patents -- Ligno-Cellulosic Material

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2,483,198, Hall, Method of Treatment of Ligno-Cellulosic Material and Product Resulting Therefrom, claims 2, 5, and 32 of application allowed; claims 12, 18, 24 to 26, and 28 to 31 refused.

## **Case History and Disposition:**

### **Appeal from Divisions 43 and 67.**

**Application for patent of Horace W. Hall, Serial No. 479,386, filed Mar. 16, 1943. From decision rejecting claims 2, 5, 12, 18, 24 to 26, and 28 to 32, applicant appeals. Reversed as to claims 2, 5, and 32; affirmed as to remaining claims.**

### **Attorneys:**

**HAROLD E. COLE, Boston, Mass., for applicant.**

### **Judge:**

Before KLINGE and WOLFFE, Examiners in Chief, and BLAKELY, Acting Examiner in Chief.

## **Opinion Text**

### **Opinion By:**

**KLINGE, Examiner in Chief.**

This is an appeal from the actions of the examiners of Divisions 43 and 67 finally rejecting claims 2, 5, 12, 18, 24, 25, 26 and 28 to 32, inclusive, under the practice of dual prosecution.

Claim 29 will serve as representative.

29. A method of manufacture comprising applying to the surface of ligno-cellulosic material formaldehyde glue, then applying rock wool to said glue on said surface, and then applying pressure and heat to said surface until said material, glue and rock wool chemically react.

The references relied upon are:

Hall, 2,366,025, Dec. 26, 1944

Townshend et al. "Heat Insulation Developed for Every Purpose"

Chem. & Met. Eng., Apr. 1932, 39 No. 4, pages 219-221.

The appealed claims define a method of manufacturing an article, such as a panel of lignocellulosic material having adhered to the face thereof an adhesive, such as urea formaldehyde glue and rock wool or asbestos, the latter having been applied by heat and pressure to the surface of the cellulosic material until the various materials are chemically reacted.

The examiner of Division 67 has rejected claims 12, 18, 24 and 25 as being indefinite and unduly broad in the use of the expression "such as" which the examiner considers objectionable since it fails to set out the material with sufficient particularity. Expressions like "such as urea formaldehyde glue" or "mineral wool such as rock wool or asbestos" are considered by the examiner as covering that which may or may not be any of the substances named. Furthermore such expressions in claims 12, 24 and 25 as "rock wool or asbestos" or "other impregnate" in claim 18 are considered objectionable under the doctrine of Ex parte Caldwell and Barr, 1906 C.D. 58.

[1] Considering for a moment the expression "material such as rock wool or asbestos," it is not clear whether the material is actually rock wool or asbestos or some other material which for some unexplained reason in the claim is like one or the other of these materials. It must be obvious on the face of things that where a chemical reaction takes place under the conditions of pressure and heat between the named material and the other materials

with which the claim is concerned, no such prediction can be made which would justify the inclusion in a patent claim of any such indeterminate and indefinite expression as that quoted above. With regard to the alternativeness of such expression, if rock wool is the equivalent of asbestos, then the expression amounts to no more than a statement of asbestos or its equivalent which was long ago condemned in the case of *Ex parte Phillips*, 1908 C. D. 195, 135 O. G. 1801. We think the examiner's rejection on the above ground is entirely proper and it will be sustained.

There is a further objection to claim 24 with regard to the varying thickness of the pieces of rock wool or asbestos. It seems to us, however, that the expression is not particularly indefinite since it would appear to be of little moment whether each piece varies as to thickness in various portions thereof or whether each piece is different from every other piece as to size. A similar objection to claim 25 is likewise not considered well taken.

The claims were further rejected by the examiner of Division 67 as unpatentable over claims 3 and 6 of appellant's own patent No. 2,366,025. The claims of the patent are limited in their scope to asbestos as the noncombustible material, whereas the claims here on appeal include as such material either rock wool or asbestos or some unknown material similar thereto, only two species being

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disclosed herein. If the appealed claims are construed as including asbestos, the species of the first case, and we think that they must be if they are to be construed as including rock wool, then they are clearly unpatentable in this case because, as the examiner points out, the appealed claims cover the same steps as the patent claims and cover the same materials. Whatever difference may be said to exist between the claims here on appeal and the claims of the patent is one of scope only and where, as here, only two materials, such as rock wool or asbestos, are named in the alternative, we see no justification for the allowance of such claims over claims already patented to appellant specifically covering one of these two materials. On the other hand, if rock wool is such a well-known equivalent of asbestos as to make its substitution obvious in this particular art, then the claims are likewise clearly unpatentable over appellant's prior patent. The rejection is proper and it will be sustained.

[2] With regard to claims 2, 5, 26 and 28 to 32, inclusive, considered by the examiner of Division 43, claims 29, 30 and 31 were rejected as unduly broad and indefinite in the term "formaldehyde glue." As stated by the examiner, formaldehyde is not itself a glue and we are aware of no standardized product known by this name. We think the rejection of these claims is well taken.

All of the claims were rejected as unpatentable over the invention claimed in appellant's patent discussed above in view of the state of the art disclosed in the Townshend et al. article in *Chem. & Met. Eng.* The examiner points out that the rejected claims here differ in reciting rock wool instead of asbestos of the patent claims and the recitation of a chemical reaction between the lignocellulose and the glue. With respect to the use of rock wool instead of asbestos the examiner considers the equivalence of these two materials to be well known, as indicated by Townshend et al., so that it would be obvious for any worker skilled in the art to substitute rock wool for the asbestos recited in appellant's patent claims.

[3] While it may be true that appellant himself has disclosed the equivalence in this case, only one species was disclosed in the first case and we believe that claims properly drawn to appellant's combination including rock wool alone should be allowed in the present application under the doctrine of *Ex parte Cohen*, 52 USPQ 189, which held that where a patent has been granted on one specific form of invention and no generic claim can be drawn, there is no objection to the allowance of claims to another species of the invention in a copending application to a second species provided the claims are not for the same invention. We think the law of that case is applicable to the situation here with respect to the use of rock wool. The rejection on double patenting of all the claims except claim 32 is proper, but as to the latter it cannot be sustained. Concerning the limitation as to a chemical reaction between lignocellulose and glue, this matter becomes of no importance and further discussion

thereof is considered unnecessary. Rock wool is neither claimed nor disclosed in appellant's prior patent and being a second species which, in our opinion, is no more obvious than the first, we consider that it may be allowed as set forth in claim 32.

The decision of the examiner of Division 67 is affirmed. The decision of the examiner of Division 43 is affirmed as to claims 2, 5, 26 and 28 to 31, inclusive, but is reversed as to claim 32.

In event of appeal attention is directed to *In re Boyce*, 32 C.C.P.A. 718, 144 F.2d 896, 1944 C. D. 609, 568 O. G. 568, 63 USPQ 80, in regard to specifically including in the appeal notice all grounds of rejection in the Examiners' Statements not expressly overruled by the Board.

### **On Petition for Reconsideration**

**Sept. 23, 1948**

Appellant has filed a petition for rehearing which will be considered as a petition for reconsideration.

Petitioner seeks allowance of claims 2, 5 and 28 and a recommendation for the entry of proposed amendments to claims 29, 30 and 31.

Upon reconsideration, it appears that claims 2 and 5 may be allowed. Claim 28 is drawn to the use of phenol formaldehyde as the glue and therefore includes a species different from claims 2 and 5 which include urea formaldehyde glue. The examiner of Division 43 held that in the absence of an allowable generic claim both types of claims may not be allowed and this holding appears to be correct. This same holding would apply as well to the proposed amendments to claims 29, 30 and 31. For this reason entry of the proposed amendments is not recommended.

The decision is modified to the extent of reversing the examiner as to claims 2 and 5, but is adhered to in all other respects.

**- End of Case -**





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## **Ex parte HASCHE**

**(BdPatApp&Int)**

**86 USPQ 481**

**Patent issued Aug. 15, 1950**

**Opinion dated Oct. 11, 1949**

**U.S. Patent and Trademark Office, Board of Patent Appeals and Interferences**

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### **Headnotes**

#### **PATENTS**

##### **1. Claims--Indefinite**

##### **Specification--Sufficiency of disclosure--In general**

##### **Words and phrases**

Claims do not properly define starting materials by use of such expressions as "which may be" and "such, for example as"; R.S. 4888 requires claims to be in distinct and definitive language clearly outlining field sought to be monopolized; where asserted improvement is presented over old procedure, appropriate language in specification and claims may be used to distinguish between what is old and what is asserted to be applicant's invention; in modification of old procedures, it is essential that claim not only define modification, but also define field to which modification applies; in requiring adequate definition of invention, Office merely carries out mandate of statute as interpreted by courts.

##### **Particular patents--Producing Acetylene**

2,518,688, Hasche, Process Producing Acetylene, claims 1 to 6, 9, and 10 of application refused.

#### **Case History and Disposition:**

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##### **Appeal from Division 31.**

**Application for patent of Rudolph Leonard Hasche, Serial No. 634,047, filed Dec. 10,**

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**1945. From decision rejecting claims 1 to 6, 9, and 10, applicant appeals. Affirmed.**

**Attorneys:**

**HARRIS, KIECH, FOSTER & HARRIS, Los Angeles, Calif., and BURNS & DOANE, Washington, D. C., for applicant.**

**Judge:**

Before PORTER, WOLFFE and GENIESSE, Examiners in Chief.

### **Opinion Text**

**Opinion By:**

**GENIESSE, Examiner in Chief.**

This is an appeal from the action of the examiner finally rejecting claims 1 to 6, 9 and 10, all of the claims pending in the application.

Claims 1 and 9 are reproduced as illustrative:

1. A process of forming a gas containing substantial amounts of acetylene, which comprises: heating a first gas at a subatmospheric pressure to a sufficient temperature to form a second gas containing substantial amounts of hydrocarbons which have been produced during said heating and which readily form acetylene, said temper

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ature being below that at which substantial amounts of acetylene are formed by the conversion of other hydrocarbons; diluting said second gas with a diluent gas which does not react with said second gas, thus forming a third gas; establishing a pressure on said third gas which is in excess of the pressure of said second gas; and increasing the temperature of said third gas to a degree sufficient to form a fourth gas containing substantial amounts of acetylene.

9. A process of forming a gas, hereinafter called a fourth gas, from a suitable charging stock, hereinafter called a first gas, which comprises: heating the first gas, which may be ethane, propane, or butane, or any mixture of hydrocarbons containing said lighter hydrocarbons, such, for example, as the vapors or gas produced by heating natural gas to a temperature below 1500°F. and at a pressure of about 250 mm. of mercury, to produce a second gas; simultaneously raising said second gas to a pressure slightly above atmospheric pressure and diluting the second gas with a sufficient amount of inert diluent, such as steam, natural gas, methane, or hydrogen, the gas produced by said change in pressure and dilution being hereinafter called the third gas; and heating said third gas to a temperature of the order of 3000°F., said third gas being held at this temperature for 1/10 second or less, the gas produced by said raise in temperature being the fourth gas.

The references relied on are:

Eldred et al. 1,234,886 July 31, 1917

Wulff 1,880,309 Oct. 4, 1932

Morrell 2,030,070 Feb. 11, 1936

Celanese (British) 471,837 Sept. 10, 1937.

The appealed claims relate to a method of producing acetylene by subjecting hydrocarbons to a pyrolytic action in two stages. The pyrolysis temperature and pressure in the first stage are somewhat lower than in the second stage. A diluent gas is added to the product of the first stage of pyrolysis.

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[1] All of the claims have been rejected as failing to properly define the subject matter with the particularity required by Sect. 4888 Revised Statutes. The examiner has criticized the claims in detail, calling attention to the fact that claims 1 to 6 fail to define the starting materials, and that claims 9 and 10 do not present a proper definition of such starting materials using such expressions as "which may be," "such, for example as." We find no convincing answer to the examiner's criticisms and rejections of the claims as not properly defining the alleged invention.

Appellant asserts that the matters referred to by the examiner are all familiar in the art and that the claims should not be burdened with details which refer to what is already known in the art as distinguished from what he says he has invented. We are not in agreement with these arguments. The Statutes require the claims to be in distinct and definitive language which clearly outlines the field sought to be monopolized. In a situation where an asserted improvement is presented over a confessedly old procedure appropriate language in the specification and also in the claims may be used to distinguish between what is concededly old and what is asserted by an applicant to be his invention. In the modification of old procedures it is essential that the claim not only define the modification but also define the field to which that modification applies. Appellant presents a general criticism of this Office for its asserted refusal to allow broad claims. In requiring adequate definition of an alleged invention the Office is merely carrying out the mandate of the Statute as interpreted by the courts. See *Standard Oil Co. of Calif. v. Tidewater Assoc. Oil Co.*, 154 F.2d 579 [ 69 USPQ 41 ]; *Chipman Chemical Engineering Co. v. Reade Mfg. Co.*, 62 F.2d 430 [ 16 USPQ 2 ]; *Incandescent Lamp Patent*, 1895 C.D. 675.

The claims have also been rejected as unpatentable over Wulff in view of either Morrell or Eldred et al. The examiner has pointed out the pertinent portions of these references and stated in what manner they were to be applied to the claims. Wulff discloses a method of making acetylene by the pyrolysis of an ethylene-containing gas after dilution with an inert vapor such as hydrogen or nitrogen. Wulff states that the ethylene-containing gas for the pyrolysis may be obtained by pyrolyzing a petroleum product. Wulff refers to the Eldred et al. patent as disclosing a suitable process of producing the ethylene-containing gas. Eldred et al. disclose a process of pyrolyzing petroleum hydrocarbons at a temperature of about 700°C. (1292°F.) to produce an ethylene-containing gas. The patentees state that the process may be carried out at atmospheric or other pressure without much change in the result. Since Wulff clearly discloses that the ethylene-containing product of Eldred et al. may be used to produce acetylene by diluting and pyrolyzing at a temperature above 1500°F., it would appear that following these suggestions of Wulff would provide a substantial anticipation of claims on appeal in so far as they can be understood.

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Appellant asserts that the step of diluting the pyrolysis product of the first step and then pyrolyzing the resultant mixture at a higher pressure is not disclosed in the references. As stated above Eldred et al. indicate that changes in pressure are without significant effect on his process. Wulff certainly discloses the dilution of such a gas with an inert gas. Wulff may operate at atmospheric pressure in the second stage. We find nothing in the present record indicating any material improvement in the result in this asserted change in pressure of operation between the first and second stages. Moreover, as pointed out by the examiner, Morrell suggests a lower temperature pyrolysis of hydrocarbon gases at a low pressure. While the brief asserts that this pressure differential is not specifically disclosed in the references, no assertion is made that such a pressure differential results in any material advantages. Since it appears from the references that each of the stages of the pyrolysis may be conducted independently at different pressures it would appear to be only a matter of choice as to what pressures are to be used.

The claims were also rejected as unpatentable over Morrell in view of Celanese. This rejection appears to be

cumulative with respect to that discussed above. We find no reversible error in the examiner's action.

The decision of the examiner is affirmed.

In event of appeal attention is directed to *In re Boyce*, 32 C.C.P.A. 718, 144 F.2d 896, 1944 C.D. 609, 568 O.G. 568, 63 USPQ 80, in regard to specifically including in the appeal notice *all* grounds of rejection in the Examiner's Statement not expressly overruled by the Board.

- End of Case -

